SOUTH WAKE AMATEUR RADIO CLUB

SWARCER NEWS

Sunday, December 7, 2008

olume 1, Issue 5

DECEMBER MEETING WAS A BLAST!

The December meeting was a social. There were lots of great food and fellowship. Jack, WA2YBM was surprised by the birthday cake. Happy 80th Birthday Jack! Santa even made an appearance! More pictures can be found online at www.tbabbphoto/swarc.

SPECIAL POINTS OF INTEREST:

- Net nightly at 7:30 on the 147.105
- Tuesday night Net on 440 Linking system
- Next meeting is on January 5, 2009 at 7PM at Fuquay Varina Presbyterian Church: 307 N Ennis Street, Fuquay-Varina
- January meeting we learn about contesting

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WE ARE OFFICIALLY ARRL AFFILIATED

BY AI4WF DALE WHITLOCK

Dear Dale:

It gives me great pleasure to advise you that the ARRL Executive Committee has approved your club's application for affiliation with the ARRL. Your club is hereby declared a duly affiliated society with an affiliation date of November 4, 2008.

A charter has been generated and sent to you to honor this important event. We hope you will coordinate a "Charter Party," and invite your Division Director, Section Manager (SM), or Affiliated Club Coordinator (ACC) for a special presentation. Addresses of Directors and SMs are on pages 15 and 16 of *QST*.

We ask that you keep these officials and us posted on your club's activities. Please send copies of any club news to your SM, ACC, Director and us. Please feel free to contact us with any questions or concerns; we are all vitally interested in your progress.

Your club is now eligible for the benefits of ARRL affiliation; we hope you will make full use of our services. One of those services is our online booklet full of helpful information for clubs – the *Active Club Online Primer* at http://www.arrl.org/FandES/field/club/cpw/. Want to get your club more involved in public service? Want to present programs that make meetings lively? This online book permits quick access to hundreds of pages that can enhance the club and help it gain new members.

Again, congratulations and welcome. We look forward to a long and fruitful relationship with your club.

73,
Dawn Trigilio
ARRL Affiliated Clubs

MINUTES OF THE DECEMBER MEETING

BY KI4TFO JENNIFER AVERY

There were no reports from the officers at this meeting as the event was a social one.

The only order of business was brought by NC4RA, Ryan, who talked to the club about obtaining a Club call sign for the club's use and especially for Winter Field day. Ryan suggested that we use N4SWC. A motion was made and passed to apply for the vanity club call sign.

There is a new member to the club, NC4XX, Don Turlington.

The meeting was adjourned when Santa came calling.

JANUARY MEETING

The January meeting is scheduled for January 5, 2009. As always, we will eat at 6:00PM and the meeting will start at 7:00PM. Tommy Williams, KI4VSO, will be talking to us about contesting. I am sure some mention of Winter Field day will be made!

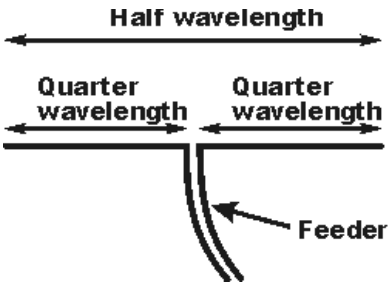
TECH TIP

BY W4VCF JIM WILLIAMS

The Dipole Antenna

The dipole antenna is one of the most widely used types of antenna. It can be used on its own, or as the driven element of other types of antenna designs.

The basic construction of a dipole is quite straightforward and can be constructed from a few simple pieces of wire. The dipole, while not having the performance of other more sophisticated types of antenna can nevertheless prove very effective and quite satisfactory for amateur radio use.

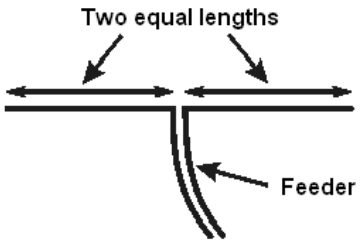


The basic half wave dipole antenna

Basic dipole facts

The name dipole means two poles and the antenna does in fact consist of two "poles" or sections. These are normally equal in length, making the antenna what is termed a center fed antenna.

The power is applied to the dipole antenna itself through a feed line. The feed line purpose is to transfer the power to or from the antenna with as little loss as possible.

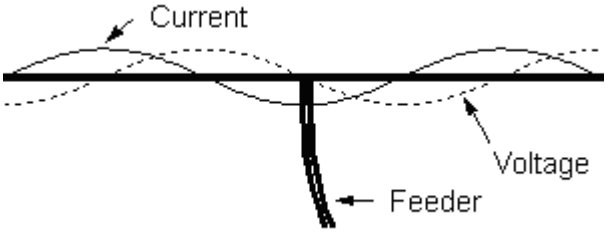


The basic dipole antenna configuration

The most common form of dipole has an electrical length of half a wavelength. As a result this antenna is called a half wave dipole. As before the lengths of the wires are both the same. As the total length of the dipole is a half wavelength, this makes each section or leg of the dipole a quarter wavelength long.

Current and voltage on a dipole

In order that power flows into or out of an antenna that is transmitting or receiving, there must be associated currents and voltages. The levels of current and voltage vary along the length of the antenna, and it is found that the **current** distribution along a dipole is roughly sinusoidal. It falls to zero at the end and is at a maximum in the middle. Conversely the **voltage** is low at the middle and rises to a maximum at the ends. It is generally fed at the center point where the current is at a maximum and the voltage is at a minimum. This provides a low impedance feed point for the dipole. High voltage feed points are far less convenient and more difficult to use. When multiple half wavelength dipoles are used, they are similarly normally fed in the center. Here again the voltage is at a minimum and the current at a maximum. Theoretically any of the current maximum nodes could be used.



Three half wavelength wave dipole antenna

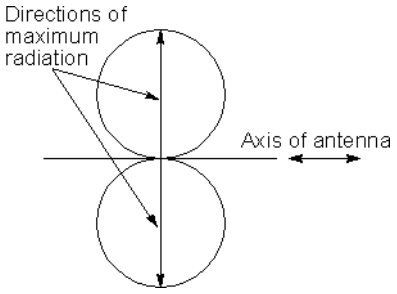
TECH TIP CONT...

Dipole feed impedance

All antennas have what is termed a feed impedance. This is the impedance that is seen at the point in the antenna where the feed line is connected. The impedance is measured in ohms, and to ensure that the maximum amount of power is transferred between the feed line and the antenna, it is necessary to ensure that the antenna and feed line impedances are matched, i.e. they have the same value.
The feed impedance of a dipole antenna is dependent upon a variety of factors including the length, the feed point location, as well as the surrounding environment. A half wave center fed dipole antenna in free space has an impedance 73.13 ohms making it ideal to feed with 75 ohm feeder. An inverted V, which is a very common form used in the amateur radio service, has a lower impedance at the feed point. As the ends are move to form a smaller angle, the feed point impedance decreases.

Polar diagram

The polar diagram of a half wave dipole antenna that the direction of maximum sensitivity or radiation is at right angles to the axis of the antenna. The radiation falls to zero along the axis of the antenna as might be expected.

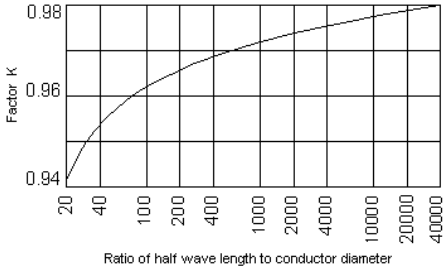


Polar diagram of a half wave dipole in free space

As the length of the dipole antenna is increased, relative to the frequency, the radiation pattern is altered. The familiar figure eight pattern changes to give main lobes and a few side lobes. The main lobes move progressively towards the axis of the antenna as the length increases.

Dipole antenna length

The length of a dipole is the main determining factor for the operating frequency of the dipole antenna. Although the antenna may be an electrical half wavelength, or multiple of half wavelengths, it is not exactly the same length as the wavelength for a signal traveling in free space.
For a half wave dipole the length for a wave traveling in free



space is calculated and this is multiplied by a factor "K". Typically it is between 0.96 and 0.98 and is mainly dependent upon the ratio of the length of the antenna to the thickness of the wire or tube used as the element. Its value can be approximated from the graph:

In order to calculate the length of a half wave dipole the simple formula given below can be used:

Length (feet) = 492 x K / frequency in MHz
Length (inches) = 5905 x K / frequency in MHz

Using these formulae it is possible to calculate the length of a half wave dipole. Even though calculated lengths are normally quite repeatable it is always best to make any prototype antenna slightly longer than the calculations might indicate. This needs to be done because changes in the thickness of wire being used may alter the length slightly and it is better to make it slightly too long than too short so that it can be trimmed so that it resonates on the right frequency. It is best to trim the antenna length in small steps because the wire or tube cannot be replaced very easily once it has been removed.

FUQUAY-VARINA CHRISTMAS PARADE
DECEMBER 7, 2008

Member of the South Wake Amateur Radio Club assisted the Fuquay-Varina Area Chamber of Commerce with helping with communication at the annual Fuquay Christmas Parade in Down Town on Sunday, December 7, 2008. Member utilizes the Carolina 440 UHF linking systems Holly Springs Repeater 444.325. Thomas ww4tlb handle net control while Jeremy kf4fyx was used to work with inserting the 3 bands in the parade. Down the line the list of great works is a mile long starting with Stan Ka1czi was staged at king street, next was good old Jack wa2ymb was on scene with Police at Wake Chapel Road Post. Mark aj4kz was keeping everybody in line at the Bob Barker plaza, Nathan and Mom Christy kj4aeo were guiding the parade toward downtown area where they handed off the the parade to Glen and Anna Kf4rdu and KF4USQ. Chris was near the Free hot chocolate in the crowd keeping his hot chocolate cup full at all time oh did mention keeping the parade moving and catching all the candy being thrown out, (no candy was suppose to be thrown out). Tommy and Father Jim (ki4vso and w4vcf) worked Vance street keeping kids out of the street and the parade turning right. A new employee at the chamber of Roger w2isg who is a ham helped with staging of special cars in the parade.

Ron Tropcich, Executive Director of the Fuquay-Varina chamber Area of commerce, " Many thanks to South Wake Amateur Radio club for providing the chamber the communication support during the annual Christmas Parade all went very good, and I hope you will mark your calendar for next year parade to help again.

Over all everything went well. I think we all learned that our HT work better with fresh batteries and closer to the repeater. We are in hopes that **Santa** will bring the club a UHF repeater and a new site in Fuquay-Varina so we will have a closer repeater to work event. Many thanks to Ronnie Casey for allowing the club to use the Carolina 440 UHF linking system for Public service events.

This event brings a busy public service 6 months for the South Wake Amateur Radio Club to an end. I personally would like to thank my fellow wake ARC member for all the help this year and look forward to working many events in 2009 as our new club grow more. Merry Christmas to You and your families**. 73**
Submitted by ww4tlb Thomas

VE SESSION
BY AI4WF DALE WHITLOCK

Hi All

The Capital Area Radio Testing Group held a testing session in New Hill NC, just out of Apex on Saturday December 6. We are very happy with the site the North Carolina Canine Emergency Response Team provides. They also had everything set up when we arrived and would like to thank them again.

Session report is:
Four new Techs
Three new Generals (Two of which are new hams)
One new Extra

We also had one of them turn in an application for the South Wake ARC.

Again we encourage anyone wanting to take a test, or any VE that would like to help, come join us.

Respectfully
Dale AI4WF
Team Liaison

WA2YBM ANTENNA PARTY
NOVEMBER 7, 2008

NEW EDITOR NEEDED

BY AI4UP VESSIE WHITLOCK

With all of the personal commitments I have, I am unable to continue doing the newsletter. This will be the last one I will do.

I will be glad to hand over the templates that I have to the next editor. Just let me know.

I have had fun doing the newsletter, but my life is just too stressful with home, work and school. Something has to go and this newsletter is on the bottom of the priority list.

I look forward to reading future editions!

73 to all!

UPCOMING HAMFESTS AND CONVENTIONS

January 10, 2009 Forsyth Amateur Radio Club Winston-Salem FirstFest
Winston-Salem, NC
http://www.w4nc.com

February 7, 2009 Virginia State Convention (Richmond Frostfest)
Richmond, VA
http://www.frostfest.com

February 22, 2009 Vienna Wireless Society Winterfest
Annandale, VA
http://www.viennawireless.org

March 14-15, 2009 Mecklenburg Amateur Radio Society Roanoke Division Convention
Concord NC
http://www.w4bfb.org/hamfest

April 11, 2009 Raleigh Amateur Radio Society North Carolina State Convention
Raleigh, NC
http://www.rars.org/hamfest

SKYWARN INFORMATION NETS & UPCOMING EVENTS

As posted on http://www.centralcarolinaskywarn.net/

Every Tuesday at 9:15PM on the 146.88 repeater

January 27 - "Aviation Forecasting" with Raleigh NWS Meteorologist-In-Charge Darin Figurskey KC2IPY.

CAROLINA HELPING HAMS

No events listed.

More details and sign-up information can be found on links from the Ham public service calendar at: www.hampublicservice.org

LINKS OF INTEREST

South Wake ARC Club website: http://www.southwakearc.com/

South Wake ARC Yahoo group: http://groups.yahoo.com/group/southwakearc/

Piedmont Coastal Repeater Network: http://pcrn.net/

Carolina 440 linked system: http://www.carolina440.net/

Central Carolina Skywarn: http://www.centralcarolinaskywarn.net/

SouthEastern Repeater Association: http://www.sera.org/

Wake County CERT: http://www.wakecountycert.org/

Wake County ARES/RACES: http://www.wakeares.org/

ARRL: http://www.arrl.org/

FCC Universal Licensing System: http://wireless.fcc.gov/uls/index.htm?job=home

Hamfest calendar: http://k4hm.net/calendar.php

NC Canine Emergency Response Team: http://www.nccert.org/

Capital Area Radio Testing Group: http://www.cartgroup.org

CLASSIFIEDS

WANTED:

Digital Display: I am searching for a Digital display option (DG-1) for a Kenwood TS-820. Anyone that can put me on the trail to one please contact me. Tommy Williams, KI4VSO. ki4vso@gmail.com

SOUTH WAKE AMATEUR RADIO CLUB

Primary Business Address
PO Box 1565
Fuquay-Varina, NC 27526

Public Service Through Amateur Radio

South Wake ARC's primary purpose is to further the Amateur Radio Service through programs, activities, and education, in order to promote the radio knowledge, fraternalism and individual operating efficiency of our members. Further, it shall be our purpose to support the welfare of our community through public service including radio communications for emergency situations and public events, and through providing information, training, and assistance to individuals or organizations with an interest in the Amateur Radio Service.

President: Tim Ruffin W4TAR timruffin@earthlink.net
Vice President: Tommy Williams KI4VSO ki4vso@gmail.com
Secretary: Jennifer Avery KI4TFO jennavery@charter.net
Treasurer: Donn Harris NC4DH nc4dh@embarqmail.com
Membership Director: Dale Whitlock AI4WF ai4wf@nc.rr.com
Director of Large: Steve Mowels KA0GMY ka0gmy@bellsouth.net
Director at Large: Ryan Avery NC4RA rwavery@charter.net

2008/2009 MEMBER ROSTER

New member since last newsletter

Full Members:

AA4XX Paul Stroud
AE4PC Phil Cunningham
AI4OZ Don Sharer
AI4UP Vessie Whitlock
AI4WF Dale Whitlock
AJ4KZ Mark Womack
K4HM Hank Montgomery
K4ITL Danny Hampton*
K4JDR Ronnie Casey
K4MSE Dave Yow
K9RII Jim Young
KA0GMY Steve Mowels
KA1CZI Stan Czyrnik
KB4BLU Jim Staley
KC4OVF Debbie Turlington
KD4OKR Mike Ramsey
KE4RUN Hargrove Davis
KF4RDN Glenn Crissman
KF4USQ Anna Crissman
KG4HPE Patricia Babb
KG4RMT Selene Montgomery
KG4WFD Chris Caudle
KI4BRZ Randy Kemp
KI4HDZ Grady Johnson
KI4PMI Barry Emery
KI4SHY Peggy Sharer
KI4TFO Jennifer Avery
KI4TWW Haley Whitlock
KI4TWY Roy Avery
KI4VSO Tommy Williams
KI4YII Arthur Strong
KJ4CXY Dennis Parker
KJ4DNS Ron Rasberry
KI4YXO Gino Fernandini
KJ4AEO Christy Fernandini
KJ4FYX Jeremy Barnard
KJ4GIZ David Whitehurst
KJ4HNA David Caudle
NC4BJ "BJ" Jenkins
NC4DH Donn Harris
NC4MP Mark Perkins
NC4RA Ryan Avery
NC4XX Don Turlington
W2RDU John Fiorentino
W4FXE Ken Medlin
W4TAR Tim Ruffin
W4RJF Ronald Ford
W4VCF Jim Williams
WA2YBM Jack Donnelly
WB4BAH Tim Kemp
WW4TLB Thomas Babb

Associate Members:

Nancy Avery
Gloria Mowels
Philip Whitehurst
Katie Whitlock

* Lifetime Member